RC-12G Icing Test Support Aircraft

Icing tests of the Predator UAV

Requirement: Because aircraft performance and handling characteristics are affected by in-flight icing, aviation systems need to be tested to ensure mission capability following icing encounters. Over the years, water spray tankers have proven to be the safest and most effective means of producing an artificial cloud for simulation of natural icing conditions. As a part of its mission, ATTC conducts in-flight icing tests for Army aircraft and aviation systems.

Capabilities: Test aircraft can be flown in two atmospheric conditions. *Artificial icing* is conducted by using a tanker-produced spray cloud generated by the HISS. *Natural icing* is performed in naturally occurring clouds. ATTC's RC-12 icing aircraft measures, calibrates, and documents the liquid water content, median volumetric diameter, static temperature, and relative humidity in the test environment using a variety of sensors including laser probes.

Facilities: Operating from facilities in Duluth, Minnesota, ATTC provides 20,000 square feet of heated hangar space, 4,500 square feet of office space, and 3,500 square feet of shop and storage space. Uncongested airspace and cooperative air traffic controllers are additional factors favoring this test location.

Icing Costs: The current tanker aircraft flying rate is $5500 per flight hour. Cost of a five-week, "comprehensive" icing program (natural and artificial) runs close to $1 mil. Tanker icing costs are approximately $500K.

ATTC - Tested Aircraft					
Army		***Department of Defense (DoD)***		***Civilian, Non-DoD***	
AH-1	EH-60	SH-60	Navy	DH-6 (R&D)	NASA
AH-64A	OH-58	C-17	Air Force	412	Bell
CH-47	UH-1	V-22	Marine Corps	214ST	Bell
UH-60	YUH-60	EC-130V	Coast Guard	S-76	Sikorsky
U-21	YUH-61			Predator UAV	General Atomics
C-12	RC-12				

Since its 1973 origin, the HISS has supported 45 icing and four rain/water tightness programs